

Appl. No. 10/760,993
Amdt. dated May 18, 2006
Reply to office action of February 10, 2006

This listing of claims will replace all prior versions, and listing of claims in the application:

1. (currently amended) A computer-readable medium having computer readable data structure stored thereon for representing geographic features in a geographic region, the computer readable data structure comprising:
 - data entities that represent geographic features located in the geographic region;
 - and
 - a plurality of drawcodes, wherein each drawcode represents a unique combination of attributes associated with the geographic features represented by the data entities, and wherein each of the data entities that represent the geographic features is associated with one of the drawcodes, and wherein each drawcode is associated with information that identifies drawing characteristics for rendering the geographic features represented by the data entities associated therewith.
2. (original) The computer-readable medium of claim 1, wherein the data entities are organized on the computer-readable medium based on the drawcode of each data entity.
3. (original) The computer-readable medium of claim 1, wherein each drawcode represents a collection of database attributes associated with the data entities.
4. (original) The computer-readable medium of claim 1, further comprising header data that identifies the geographic region.
5. (original) The computer-readable medium of claim 1, wherein the data entities are grouped into a plurality of parcels based on geographic location of the geographic

Appl. No. 10/760,993
Amdt. dated May 18, 2006
Reply to office action of February 10, 2006

features represented by the data entities and further wherein the data entities within each parcel are sorted by drawcode.

6. (original) The computer-readable medium of claim 1, wherein the data entities are grouped into a plurality of parcels based on geographic location of the geographic features represented by the data entities.

7. (original) The computer-readable medium of claim 1, wherein the data entities are organized into groups based on the drawcode of each data entity such that data entities that have the same drawcode are grouped together.

8. (original) The computer-readable medium of claim 1, wherein the data entities are sorted on the computer-readable medium by drawcode such that data entities that have the same drawcode are stored adjacent to each other.

9. (original) The computer-readable medium of claim 1, wherein each drawcode is associated with a unique combination of rank, road type, and road attribute associated with the data entities that represent geographic features.

10. (original) The computer-readable medium of claim 1 wherein the geographic features represented by the data entities include roads.

11. (original) The computer-readable medium of claim 1 wherein the geographic features represented by the data entities include 2-dimensional and 3-dimensional geographic features.

12. (original) A method of producing a geographic database comprising:
 identifying combinations of attributes associated with geographic features
 located in a geographic region that are in common among the geographic
 features;

Appl. No. 10/760,993
Amdt. dated May 18, 2006
Reply to office action of February 10, 2006

associating drawcodes with the combinations of attributes, wherein each
drawcode is associated with a distinct combination of attributes; and
storing data entities in the geographic database to represent the geographic
features, wherein data entities having the same drawcode are stored
together in groups.

13. (original) The method of claim 12, wherein storing the data entities comprises
storing data entities having the same drawcode adjacent to each other on a computer-
readable medium.

14. (original) The method of claim 12, wherein storing data entities in the geographic
database to represent the geographic features comprises storing data entities having
the same drawcode adjacent to each other in the geographic database.

15. (original) The method of claim 12, wherein storing data entities in the geographic
database to represent the geographic features comprises:
 sorting the data entities by drawcode; and
 storing the sorted data entities in the geographic database.

16. (original) The method of claim 12, wherein storing data entities in the geographic
database to represent the geographic features comprises storing the data entities in
spatially organized parcels and sorted by drawcode when stored in each parcel.

17. (original) The method of claim 12, further comprising creating a drawcode table that
indicates definitions of each drawcode.

18. (original) The method of claim 17, further comprising storing the drawcode table
within a header in the geographic database.

19. (original) The method of claim 17, wherein the drawcode table correlates

Appl. No. 10/760,993
Amdt. dated May 18, 2006
Reply to office action of February 10, 2006

drawcodes with combinations of geographic features found in the geographic region.

20. (original) The method of claim 17, wherein the drawcode table includes information selected from the group consisting of a rank, a road type, and a road attribute.

21. (original) The method of claim 12, wherein associating drawcodes with the combinations of attributes comprises assigning up to about 256 drawcodes.

22. (original) The method of claim 12 wherein the geographic features represented by the data entities include roads.

23. (original) The method of claim 12 wherein the geographic features represented by the data entities include 2-dimensional and 3-dimensional geographic features.

24. (original) A method for storing computer readable data for representing geographic features in a geographic region, wherein the computer readable data includes a plurality of data entities, each data entity representing a geographic feature located in the geographic region, the method comprising;

- associating each data entity with a drawcode, wherein each drawcode defines a distinct set of attributes associated with the geographic features;
- sorting the plurality of data entities into groups by drawcode; and
- storing in a computer-readable database, the sorted plurality of data entities.

25. (original) The method of claim 24, wherein associating each data entity with a drawcode comprises assigning a drawcode to each data entity.

26. (original) The method of claim 24, wherein the drawcode represents a collection of underlying database attributes used to form a polyline.

Appl. No. 10/760,993
Amdt. dated May 18, 2006
Reply to office action of February 10, 2006

27. (original) The method of claim 24, wherein associating each data entity with a drawcode comprises assigning up to about 256 drawcodes.

28. (original) The method of claim 24, wherein storing in the computer-readable database the sorted plurality of data entities comprises storing the data entities in a sequential manner based on the drawcode of each data entity.

29. (original) The method of claim 24, wherein sorting the plurality of data entities into groups by drawcode comprises sorting the plurality of data entities in groups having data entities associated with the same drawcode adjacent to each other in the computer-readable database.

30. (original) A computer readable medium having stored therein instructions for causing a processing unit to execute the method of claim 24.

31. (original) The method of claim 24 wherein the geographic features represented by the data entities include roads.

32. (original) The method of claim 24 wherein the geographic features represented by the data entities include 2-dimensional and 3-dimensional geographic features.

33. (original) A method for displaying images of portions of a geographic region on a computer display, wherein the images portray geographic features located in the geographic region, the method comprising:

reading from a computer readable database stored on a computer readable medium a group of data entities, wherein the data entities represent the geographic features, and wherein each data entity in the group has an associated drawcode which defines a combination of attributes associated with the represented geographic feature, the drawcode being associated

Appl. No. 10/760,993
Amdt. dated May 18, 2006
Reply to office action of February 10, 2006

with information that identifies drawing characteristics for rendering the represented geographic feature; and
rendering on the computer display images of the geographic features that correspond to the data entities in the group.

34. (original) The method of claim 33, further comprising determining a portion of the geographic region to be displayed.

35. (original) The method of claim 33, further comprising locating the group of data entities on the computer readable database.

36. (original) The method of claim 35, wherein reading from the computer readable database stored on the computer readable medium the group of data entities comprises reading data associated with the geographic features and reading the associated drawcodes.

37. (original) The method of claim 36, further comprising determining attributes of the geographic features represented by the data entities from the associated drawcodes.

38. (original) The method of claim 37, wherein determining geographic features associated with the group of data entities comprises referencing a drawcode table to identify the geographic features associated with the group of data entities based on the associated drawcode of each data entity.

39. (original) A computer readable medium having stored therein instructions for causing a processing unit to execute the method of claim 33.

40. (original) The method of claim 33 wherein the geographic features represented by the data entities include roads.

Appl. No. 10/760,993
Amdt. dated May 18, 2006
Reply to office action of February 10, 2006

41. (original) The method of claim 33 wherein the geographic features represented by the data entities include 2-dimensional and 3-dimensional geographic features.

42. (original) A system comprising:

a geographic data set stored on a computer readable medium, the geographic data set including data entities representative of geographic features in a geographic region, wherein each of the data entities is associated with one of a plurality of drawcodes, each of which represents a unique combination of attributes associated with a represented geographic feature;

a navigation application for providing navigation features to an end user; and

a processor operable to access the geographic data set to read a group of data entities and to execute the navigation application to display images on a computer display, wherein geographic features represented by data entities having the same drawcode are rendered with lines having the same color and thickness.

43. (original) The system of claim 42, further comprising a positioning system for determining a location in the geographic region, and wherein the processor accesses the geographic data set to retrieve data associated with the location.

44. (original) The system of claim 42, further comprising a user interface coupled to the processor and operable to receive an input from a user.

45. (original) The system of claim 42 wherein the geographic features represented by the data entities include roads.

46. (original) The system of claim 42 wherein the geographic features represented by the data entities include 2-dimensional and 3-dimensional geographic features.

Appl. No. 10/760,993
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REMARKS

I. Introduction

As a preliminary matter, Applicants appreciate Examiner Marie Weiskopf's and Supervisory Examiner Thomas Black's time and courtesy extended during the May 15, 2006 personal interview with applicants' representative, Grace Law O'Brien. As noted in the interview summary, we agreed that the claims overcome the Israni reference and claim 1 will be amended to include the term "structure" after the term "computer readable data." In response, Applicants submit "Amendment A" in light of the Examiner interview.

In the Office Action, Applicants' Claims 1, 3, 4, 6, 9-10, and 33-40 are rejected under 35 U.S.C §102 (b) as being anticipated by Israni et al. (U.S. Patent No. 6,308,177) ("Israni"). Claims 42 through 46 are rejected under 35 U.S.C. §103(a) as obvious over Israni in view of Twig et al. (U.S. Patent No. 6,665,676). Claims 2, 5, 7-8, and 12-32 have been indicated as allowable subject matter. Applicant respectfully amends the claims and requests the allowance of the present application.

II. 35 U.S.C. § 102(b) and §103(a) Rejection of Claims 1 through 46

Claims 1 through 46 have been rejected under 35 U.S.C. § 102(b) and §103(a) on the bases of Israni and Twig. During an interview with the Examiner and the Supervisory Examiner, we agreed that claims 1 through 46 overcome the Israni reference. Furthermore, to expedite prosecution of the present application, Applicants also agreed to amend claim 1 to correct a minor informality discussed at the interview. Accordingly, Applicants respectfully request that claims 1 through 46 be allowed.